MAINE

HIGHWAY SAFETY
IMPROVEMENT PROGRAM
2017 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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23 U.S.C. 148(h)(4) states "Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section [HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data."

23 U.S.C. 409 states "Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data."

Executive Summary

Maine has a data driven approach for HSIP project selection, assessing various aspects of crash performance. Before and After crash results comparisons on safety projects have consistently shown performance improvement over the years. HSIP selection process is re-evaluated each year to see if there are opportunities for enhancement and for improved alignment for the state's SHSP.

Supplemental safety projects that are more systemic in nature, like centerline rumble strips and median cable barrier are also funded. Systemic approach was used in selecting centerline rumble strips during project years of 2016-2020. 2016 was Maine's largest rumble strip installation year with about 150 miles going in and a similar number of miles are planned for 2017. Maine is looking to expand it's systemic approach to further impact lane departure crash reduction - Maine's leading crash concern. A more involved data analysis process is underway to develop a systemic approach to crashes on curves - a major segment of Maine's Went Off Road Crashes. Other broad strategies are underway to address speed management, pedestrian safety and interstate wrong way ramp entries.

Pedestrian Safety emphasis has a solidified strategy where targeted outreach to communities is underway which includes safety reviews of locations where public expressed priority needs. Program is multi-agency involved and emphasis includes improved pedestrian visibility at night with sponsorship of materials from 3M/Scotchlite.

Public accessibility to crash data has been enhanced with two on-line products now available.

A new SHSP is planned for 2017, with edits well underway.

Fatalities did rise for a second year in the state after reaching a 70 year low in 2014. Pedestrian fatalities remain high for a second year, helping drive the pedestrian outreach effort noted above.

In developing a list of priority intersection locations to evaluate, MaineDOT has utilized the Highway Safety Manual (HSM) to prioritize locations. This new analytical approach appears to be a good way to identify probable locations that should be field evaluated for safety mitigation.

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

Maine's HSIP structure has several facets that together build a comprehensive safety strategy

- One person is dedicated to identifying specific locations of need, primarily intersections, and as noted above, the primary tool being used this year for initial system-wide screening is the highway safety manual.
- A wide variety of resources within MaineDOT are contacted to generate safety project needs including Regional Operations, Local Roads, Bike/Ped, Traffic Engineering
- There is a Highway Safety Group within MaineDOT that has a cross representation of DOT functional areas that meets regularly and one of the tasks is to drive toward identifying work projects that fit leading areas of concern.
- There also is an executive level Safety network that may identify program needs.
- MaineDOT's Safety Office is the coordinating point of all of this activity.
- MaineDOT holds regional planning meetings to finalize Departmental needs, including safety and makes sure that related work projects are synchronized.

Where is HSIP staff located within the State DOT?

Other-Planning and Safety Office

Enter additional comments here to clarify your response for this question or add supporting information.

Safety Office is ultimate clearing house, Planning completes the hot spot location list.

How are HSIP funds allocated in a State?

SHSP Emphasis Area Data
Other-Use Benefit Cost Criteria

Enter additional comments here to clarify your response for this question or add supporting information.

Funding allocation is a collective effort between MaineDOT executive leadership and the Highway Safety Committee as part of the annual workplan process. Discussion takes place at the committee level to determine appropriate allocation percentages for spot improvement projects, systemic improvement projects, and programmatic opportunities. The goal is to reach a strategic balance that aligns with the SHSP focus areas. The funding approach looks to mix spot improvements with systemic needs, programmatic opportunities and reaching strategic balance in use of available funds.

MPO/RPO are using their departmentally allocated funds (not HSIP, but general state allocations). This past planning period, MPO/RPOs were asked to focus on addressing high crash locations. Any priority needs could either be funded through MPO/RPO state funding or if they qualify, through the benefit/cost driven HSIP process.

Describe how local and tribal roads are addressed as part of HSIP.

Local roads are included with the state-wide project candidates. Maine does capture crash and roadway data for Local roads and so is able to evaluate all locations within the state based on similar crash and benefit/cost performance comparisons. Local requests are also receieved based on crash concerns and are reviewed as part of the candidate screening process.

Maine does now have an on-line crash data access system available to them to help with local analysis - and MPOs/RPOs have utilized this tool and praise its capabilities.

Identify which internal partners (e.g., State departments of transportation (DOTs) Bureaus, Divisions) are involved with HSIP planning.

Traffic Engineering/Safety
Design
Planning
Maintenance
Operations
Districts/Regions
Local Aid Programs Office/Division
Other-MPO/RPO; Bike/Pedestrian are being better integrated
Other-Environmental

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with internal partners.

Executive, Planning (including local roads and bike/ped), Traffic Engineering, Project Development, all play a part in safety planning. MaineDOT continues to enhance its Work Plan approach to integrate safety into the planning process, looking to get safety in the planning thought process early on to consider not just stand-alone safety needs, but also opportunities that would complement upcoming paving and construction projects. Safety Office is able to review corridor project candidates in advance to identify safety needs that might align with other work. Broadly distributed solicitations to internal contacts are sent out several times during the planning process and generate safety improvement opportunities.

A Highway Safety Group has been established that includes a wide operational representation and FHWA presence to look at overall state safety needs, funding philosophy and systemic opportunities. This group has embraced the systemic approach.

MaineDOT Regions have been very involved with Centerline Rumble Strip strategies, corridor reviews and project implementation.

A strong partnership between Bike/Ped Coordinator and Safety Office is established to kick off the state's Pedestrian outreach program.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Governors Highway Safety Office
Local Technical Assistance Program
Local Government Agency
Law Enforcement Agency
FHWA

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with external partners.

MaineDOT Safety Office has continuing communications and good relationships with all State, local and Federal partners. In addition, we regularly work with AAA, Maine Transport Association, Maine Turnpike, Bicycle Coalition of Maine, United Bikers of Maine (motorcycles) and others. We look for input from all and communicate out to them when needed.

Have any program administration practices used to implement the HSIP changed since the last reporting period?

Yes

Describe HSIP program administration practices that have changed since the last reporting period.

HSM is being used as a desktop screening tool to identify intersection candidates that should be further evaluated.

An executive safety has been established to get further feedback on statewide safety needs.

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

Yes

Describe other aspects of HSIP Administration on which the State would like to elaborate.

Continue to seek to balance funding of spot improvements where crash history has been clearly a problem (this has often been concentrated on intersections) with systemic opprtunities related to Lane Departure mitigations and other core safety target areas. An ongoing challenge, as one example, is creating an equitable allocation for Bike/Ped needs.

Program Methodology

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?

No

Enter additional comments here to clarify your response for this question or add supporting information.

We have an old process document, and following MaineDOT's Work Plan/Budget process this fall, we look to update and more fully document the HSIP process.

Select the programs that are administered under the HSIP.

Median Barrier
Intersection
Horizontal Curve
Bicycle Safety
Rural State Highways
Skid Hazard
Roadway Departure
Low-Cost Spot Improvements
Sign Replacement And Improvement
Local Safety

2017 Maine Highway Safety Improvement Program
Pedestrian Safety
Right Angle Crash
Left Turn Crash
Shoulder Improvement
Segments
Other-Median Cable Barrier -install completed in 2014

Enter additional comments here to clarify your response for this question or add supporting information.

Program:	Bicycle Safety

| **Date of Program Methodology:** | 8/1/2014 |

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-As speci

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes Fatal and serious injury crashes only	Traffic Volume Population	Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Crash rate
Critical rate
Probability of specific crash types
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   2
Ranking based on net benefit :   1

Enter additional comments here to clarify your response for this question or add supporting information.
Bicycle projects are not often funded in HSP, but handled through other fund sources. Fund allocations are being re-evaluated.

Program:	Horizontal Curve

Date of Program Methodology:	4/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Being evaluated as a systemic need

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	Functional classification
	Other-Highway Corridor Priority	Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate

2017 Maine Highway Safety Improvement Program
Critical rate
Probability of specific crash types
Excess proportions of specific crash types
Other-Systemic approach being used to identify corridors of most exposure

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee
Other-Benefit to Cost ranking

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C :   2
Available funding :   1

Enter additional comments here to clarify your response for this question or add supporting information.
This area too may fall under more of a systemic identification and prioritization.

Program:	Intersection

Date of Program Methodology: 4/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
		Functional classification
All crashes	Traffic	Roadside features
Fatal and serious injury crashes only	Volume	Other-MaineDOT's Highway Corridor Priority classifications

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types
Other-HSM-based screenings

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Benefit to Cost

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C :   1
Available funding :   2

Enter additional comments here to clarify your response for this question or add supporting information.
This HSM-based effort has several screening steps. It does look at Actual, Predicted and Expected crash outcome data.

Program: Left Turn Crash

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Part of instresection strategy along with center left turn lane considerations.

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Traffic	Functional classification
Fatal and serious injury crashes only	Volume	Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Benefit to Cost prioritization

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Local Safety

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Usually work with MaineDOT's Local Roads unit

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   2
Ranking based on net benefit :   1

Enter additional comments here to clarify your response for this question or add supporting information.

| **Program:** | Low-Cost Spot Improvements |

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	Functional classification
		Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   2
Cost Effectiveness :   1

Enter additional comments here to clarify your response for this question or add supporting information.
Low cost projects could come under many of the categories included in this question's PROGRAM listing

Program:	Median Barrier

Date of Program Methodology:	7/1/2010

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Systemic need

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Other-limited access highway	Median width

What project identification methodology was used for this program? [Check all that apply]

Probability of specific crash types

Other-Risk factors noted above.

Are local roads (non-state owned and operated) included or addressed in this program?

No

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   1

Enter additional comments here to clarify your response for this question or add supporting information.

Medians 50' wide and narrower were addressed.

MaineDOT's executives agreed that this was a priority area.

Program: Pedestrian Safety

Date of Program Methodology: 8/1/2015

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Allocations will be determined through Departmental discussions

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes Fatal and serious injury crashes only	Traffic Volume Population	Functional classification Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee
Other-These projects are normally coordinated through MaineDOT's Bike/Ped coordinator

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   2
Ranking based on net benefit :   1

Enter additional comments here to clarify your response for this question or add supporting information.
A focused, multi-agency effort has been in progress for a couple of years and with firm strategies executed in 2017 and will continue.

Program:	Right Angle Crash

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Part of Intersection strategies

What is the funding approach for this program? [Check one]

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Traffic	Functional classification
Fatal and serious injury crashes only	Volume	Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Benefit to Cost ranking

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C :   1
Available funding :   2

Enter additional comments here to clarify your response for this question or add supporting information.

 Program: Roadway Departure

 Date of Program Methodology: 4/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Systemic funding - such as for centerline rumble strips

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
		Median width
	Traffic	Horizontal curvature
All crashes	Volume	Functional classification
Fatal and serious injury crashes only	Lane miles	Roadside features
		Other-Posted speed limit

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Critical rate
Level of service of safety (LOSS)
Excess proportions of specific crash types
Other-Systemic for both Head On and Went Off Road (WOR). Curves will be focus for WOR

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   2
Ranking based on net benefit :   1

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Rural State Highways

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Largely lane departure issues.

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	Functional classification
		Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Crash rate
Critical rate
Level of service of safety (LOSS)
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Benefit to Cost ranking

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C :   1
Available funding :   2

Enter additional comments here to clarify your response for this question or add supporting information.

 Program: Segments

 Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Often lane departure issues

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

 Crashes   **Exposure**   **Roadway**

All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	Functional classification
		Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Benefit to Cost ranking

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C :   1
Available funding :   2

Enter additional comments here to clarify your response for this question or add supporting information.

 Program: Shoulder Improvement

 Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

Other-Often associated with lane departure, but could also relate to bike and pedestrian needs

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	Functional classification
	Lane miles	Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

Other-Benefit to Cost ranking

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C :   1
Available funding :   2

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Sign Replacement And Improvement

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	Functional classification
		Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical

rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   2
Ranking based on net benefit :   1

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Skid Hazard

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Lane departure related

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes		Horizontal curvature
Fatal and serious injury crashes only	Traffic	Roadside features

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   2
Ranking based on net benefit :   1

Enter additional comments here to clarify your response for this question or add supporting information.

Program: Other-Median Cable Barrier -install
                                          completed in 2014

Date of Program Methodology: 7/1/2016

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Department saw this as a systemic need.

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes		Median width
		Other-Limited access roadway

What project identification methodology was used for this program? [Check all that apply]

Probability of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?

No

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program advanced for implementation?

selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding :   1

Enter additional comments here to clarify your response for this question or add supporting information.
MaineDOT had an aggressive plan to have median cable barrier and extensions to existing w-beam installations to be placed over several successive years.

What percentage of HSIP funds address systemic improvements?

50

HSIP funds are used to address which of the following systemic improvements? Please check all that apply.

Cable Median Barriers
Rumble Strips
Traffic Control Device Rehabilitation
Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Upgrade Guard Rails
Safety Edge
Add/Upgrade/Modify/Remove Traffic Signal
Wrong way driving treatments
Other-Wrong Way Driver interstate ramp improvements, rapid flashing beacons for ped crossings,
Other-Went Off Road - curves

Enter additional comments here to clarify your response for this question or add supporting information.

What process is used to identify potential countermeasures? [Check all that apply]

Engineering Study
Road Safety Assessment
Crash data analysis
SHSP/Local road safety plan
Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
Stakeholder input

Enter additional comments here to clarify your response for this question or add supporting information.

We try to include all reasonable inputs to determine appropriate potential countermeasures. Use of HSM has expanded in 2017.

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

Describe how the State HSIP considers connected vehicles and ITS technologies.

This area continues to expand.

Does the State use the Highway Safety Manual to support HSIP efforts?

Yes

Please describe how the State uses the HSM to support HSIP efforts.

Right now, focus in on system-wide intersection analysis, but expect the approach developed for intersections will expand to other infrastructure reviews.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

Yes

Describe program methodology practices that have changed since the last reporting period.
Noted HSM application is the main change to note.

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

No

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter additional comments here to clarify your response for this question or add supporting information.

Enter the programmed and obligated funding for each applicable funding category.

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$12,441,250	$12,887,620	103.59%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$4,250	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$1,080,000	$162,930	15.09%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$13,521,250	$13,054,800	96.55%

Enter additional comments here to clarify your response for this question or add supporting information.

How much funding is programmed to local (non-state owned and operated) or tribal safety projects?

0%

How much funding is obligated to local or tribal safety projects?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

How much funding is programmed to non-infrastructure safety projects?

0%

How much funding is obligated to non-infrastructure safety projects?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126?

0%

How much funding was transferred out of the HSIP to other core program areas during the reporting period under 23 U.S.C. 126?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

Discuss impediments to obligating HSIP funds and plans to overcome this challenge in the future.

None. MaineDOT Safety Office continues to work with internal and external partners to coordinate and integrate safety. This process continues to be enhanced over time.

Does the State want to elaborate on any other aspects of it's progress in implementing HSIP projects?

Yes

Describe any other aspects of the State's progress in implementing HSIP projects on which the State would like to elaborate.

Maine's leading crash exposure continues to be Lane Departure, experiencing 70% of state-wide fatalities in this category.

Head-on fatalities have stabilized. Systemic opportunities are being evaluated to achieve a better funding mix that is reflective of SHSP priorities. In 2015 there was an increase in installations on centerline rumble strips - 90 miles planned then, compared to the 60 miles that existed on non-interstate road installations completed since 2006. In 2016, 150 more miles were installed, and a similar # of miles planned for later in 2017. 2016 was the first year where we faced a number of public noise-related concerns. We will be piloting another sinusoidal style installation this year. Additional rumble strip opportunities are anticipated for future planning years, but won't be as high as current levels.

Although not necessarily directly translating to HSIP funding, but certainly contributing to safety planning, there is continued dialogue with MPO's/RPO's on local safety needs and a cooperative approach on

safety performance target setting. MPO's have focused more on high crash location mitigation in 2017.

Pedestrian traffic fatalities are still a concern and a focused outreach program has been developed as a result.

General Listing of Projects

List the projects obligated using HSIP funds for the reporting period.

												RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
016336.16	Non-infrastructure	Data/traffic records	1	Signs	$20000	$26190	HSIP (23 U.S.C. 148)	Urban & Rural local roads	0	0	State Highway Agency	Systemic	Data	Signs
016336.17	Non-infrastructure	Data/traffic records	1	Signs	$20000	$25000	HSIP (23 U.S.C. 148)	Urban & Rural local roads	0	0	State Highway Agency	Systemic	Data	Signs
016336.18	Non-infrastructure	Data/traffic records	1	Signs	$20000	$25000	HSIP (23 U.S.C. 148)	Urban & Rural local roads	0	0	State Highway Agency	Systemic	Data	Signs
018893.18	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1	Signs	$45000	$50000	HSIP (23 U.S.C. 148)	Urban & Rural local roads	0	0	Town or Township Highway Agency	Systemic	Upgraded signs will address various SHSP areas.	Municipal Outreach
020485.10	Pedestrians and bicyclists	Install sidewalk	1	Crosswalks	$420036.96	$422000	HSIP (23 U.S.C. 148)	Urban Major Collector	3,910	30	Other State Agency	Spot	Pedestrians	Sidewalk
020541.18	Non-infrastructure	Educational efforts	1	Numbers	$36000	$40000	HSIP (23 U.S.C. 148)	All road classes	0		State Highway Agency	Systemic	Work Zones	Work Zone Safety Media Outreach that addresses speed and distraction
020581.18	Roadway delineation	Longitudinal pavement markings - remarking	1	Lanes	$5600000	$7000000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Systemic	Lane Departure	Statewide striping to make travelway more visible and mitigate lane departure
021660.00	Advanced technology and ITS	Over height vehicle detection	1	Signs	$40500	$45000	HSIP (23 U.S.C. 148)	Urban Local Road or Street	13,546	25	State Highway Agency	Spot	Commercial vehicles	Install OH collision warning system that prevents commercial vehicle crashes and mitigates need for incident management and secondary crashes.
021661.00	Pedestrians and bicyclists	Install sidewalk	1	Crosswalks	$17600	$151000	HSIP (23 U.S.C. 148)	Rural Local Road or Street	2,097	25	Town or Township Highway Agency	Spot	Bicyclists	Design and construct a new sidewalk
021663.00	Intersection geometry	Intersection geometry - other	1	Intersections	$90000	$100000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other	375	25	State Highway Agency	Spot	Intersections	Roadway and Intersection Safety Improvements
021664.00	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$1188000	$1320000	HSIP (23 U.S.C. 148)	Urban Principal Arterial - Other Freeways and Expressways	16,360	35	State Highway Agency	Spot	Intersections	Reconstruct Intersection

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	RELATIONSHIP TO SHSP	
													EMPHASIS AREA	STRATEGY
021781.00	Intersection traffic control	Intersection flashers - add stop sign-mounted	1	Intersections	$36000	$40000	HSIP (23 U.S.C. 148)	Rural Local Road or Street	2,704	40	Town or Township Highway Agency	Spot	Intersections	Install flashing stop signs. Remove existing OH beacons.
021783.00	Intersection geometry	Intersection geometry - other	1	Intersections	$108000	$120000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	14,249	50	State Highway Agency	Spot	Intersections	Intersection redesign to improve safety
021793.00	Roadway	Pavement surface - high friction surface	1	Lanes	$108000	$120000	HSIP (23 U.S.C. 148)	Urban Minor Collector	5,061	35	State Aid	Spot	Lane Departure	High friction surface treatment
021796.00	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1	Signs	$90000	$100000	HSIP (23 U.S.C. 148)	Urban Minor Collector	5,070	35	State Aid	Spot	Addresses a variety of SHSP areas: speed mgmt, intersections, lane departure.	Signs
21800	Non-infrastructure	Training and workforce development	1	Numbers	$13500	$15000	HSIP (23 U.S.C. 148)	Defensive Driving Training CY 2017	0		State Highway Agency	Spot	Local Roads	Municipal Defensive Driving Training Y 2017
021800.18	Non-infrastructure	Training and workforce development	1	Numbers	$13500	$15000	HSIP (23 U.S.C. 148)	Municipal Defensive Driving Training (2018)	0		State Highway Agency	Spot	Local Roads	Municipal Defensive Driving Training (2018)
21817	Pedestrians and bicyclists	Pedestrian signal - install new at non-intersection location	1	Crosswalks	$180000	$200000	HSIP (23 U.S.C. 148)	Statewide	0		Other Local Agency	Spot	Pedestrians	Provide Rectangular Rapid Flashing Beacons for Crosswalks
021821.00	Intersection traffic control	Intersection flashers - add overhead (continuous)	1	Intersections	$41400	$46000	HSIP (23 U.S.C. 148)	Rural Local Road or Street	2,790	35	Town or Township Highway Agency	Spot	Intersections	Improve intersection visibility. Install OH Flashing Beacons.
021840.00	Roadway	Roadway - other	1	Locations	$54000	$60000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	4,860	55	State Highway Agency	Spot	Roadway Departure	Shoulder Improvements
021841.00	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$90000	$100000	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	4,860	55	State Highway Agency	Spot	Intersections	Intersections
021844.00	Roadway	Roadway - other	1	Approaches	$45000	$50000	HSIP (23 U.S.C. 148)	Statewide	0	0	State Highway Agency	Spot	Work Zones	Work Zone Safety Media Outreach
021848.00	Roadway	Rumble strips - center	1	Lanes	$653963.13	$726625.7	HSIP (23 U.S.C. 148)	Statewide	0	0	State Highway Agency	Spot	Lane Departure	Rumble Strips
021849.00	Roadway	Rumble strips - center	1	Lanes	$46800	$52000	HSIP (23 U.S.C. 148)	Statewide	0	0	State Highway Agency	Spot	Lane Departure	Rumble Strips

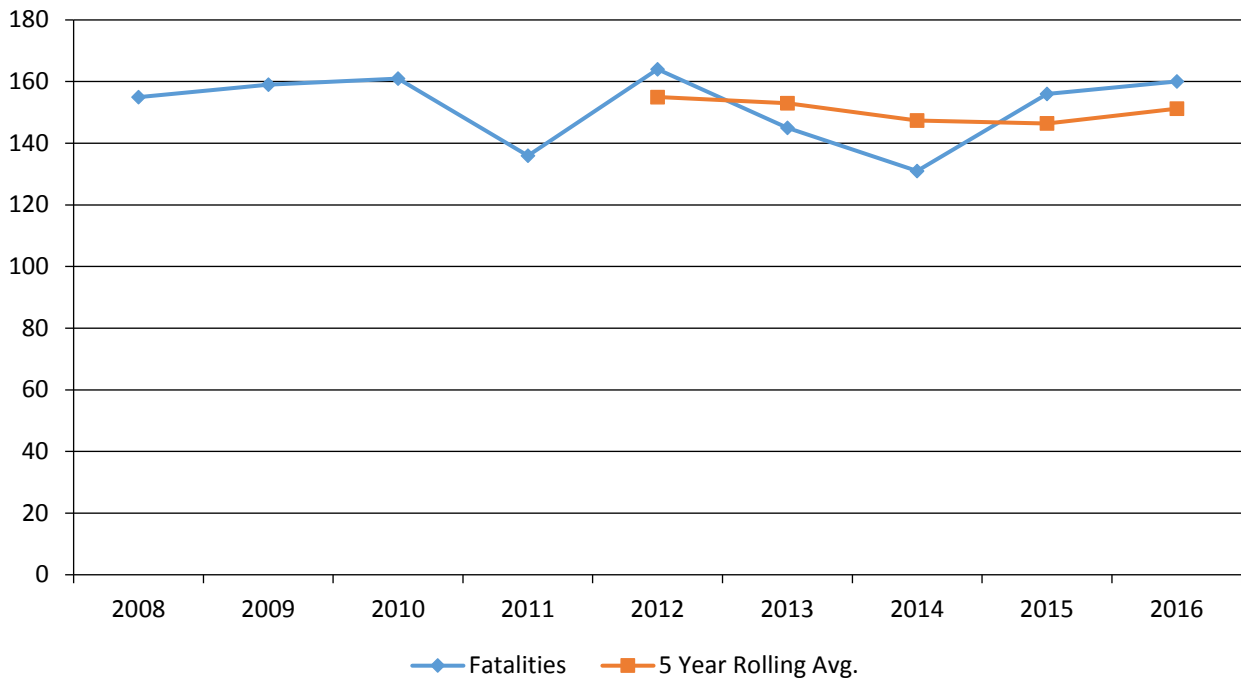**Enter additional comments here to clarify your response for this question or add supporting information.**
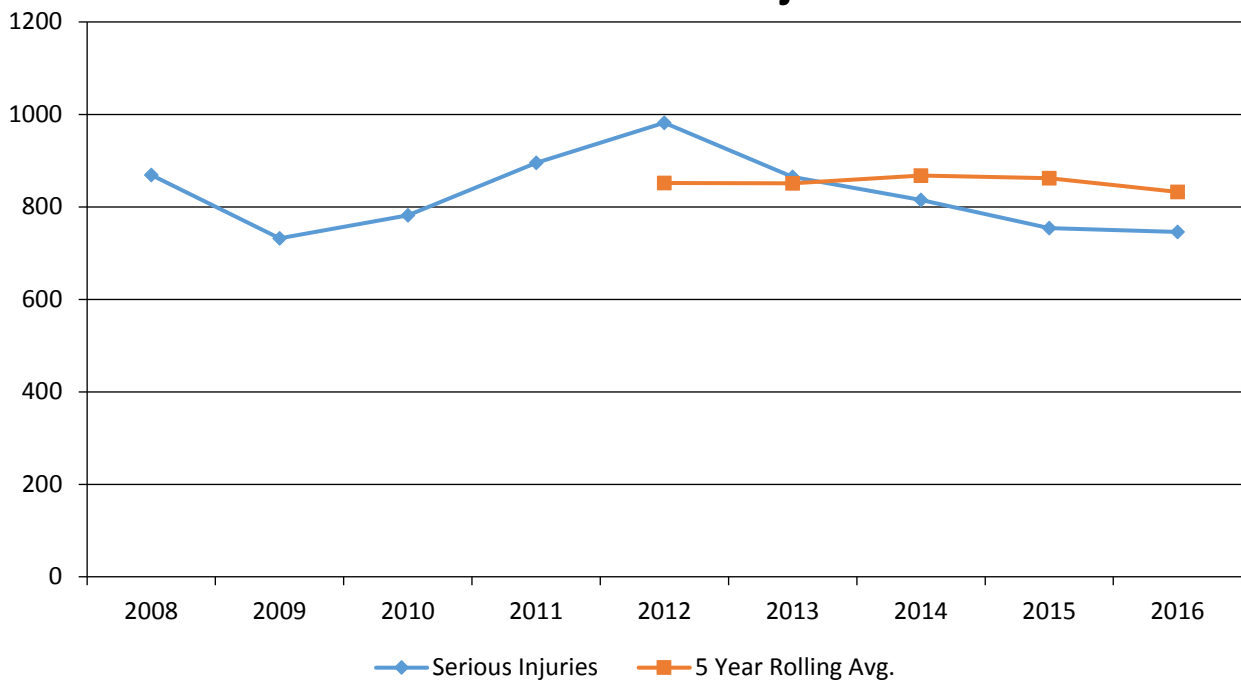
Safety Performance

General Highway Safety Trends

Present data showing the general highway safety trends in the State for the past five years.

PERFORMANCE MEASURES	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	155	159	161	136	164	145	131	156	160
Serious Injuries	869	732	782	895	982	865	815	754	746
Fatality rate (per HMVMT)	1.070	1.100	1.110	0.951	1.140	1.010	0.913	1.050	1.070
Serious injury rate (per HMVMT)	5.980	5.050	5.370	6.260	6.830	6.010	5.680	5.080	4.980
Number non-motorized fatalities	17	13	13	11	10	15	11	19	21
Number of non-motorized serious injuries	62	61	52	81	101	59	88	64	72

Annual Fatalities

Annual Serious Injuries

Fatality rate (per HMVMT)
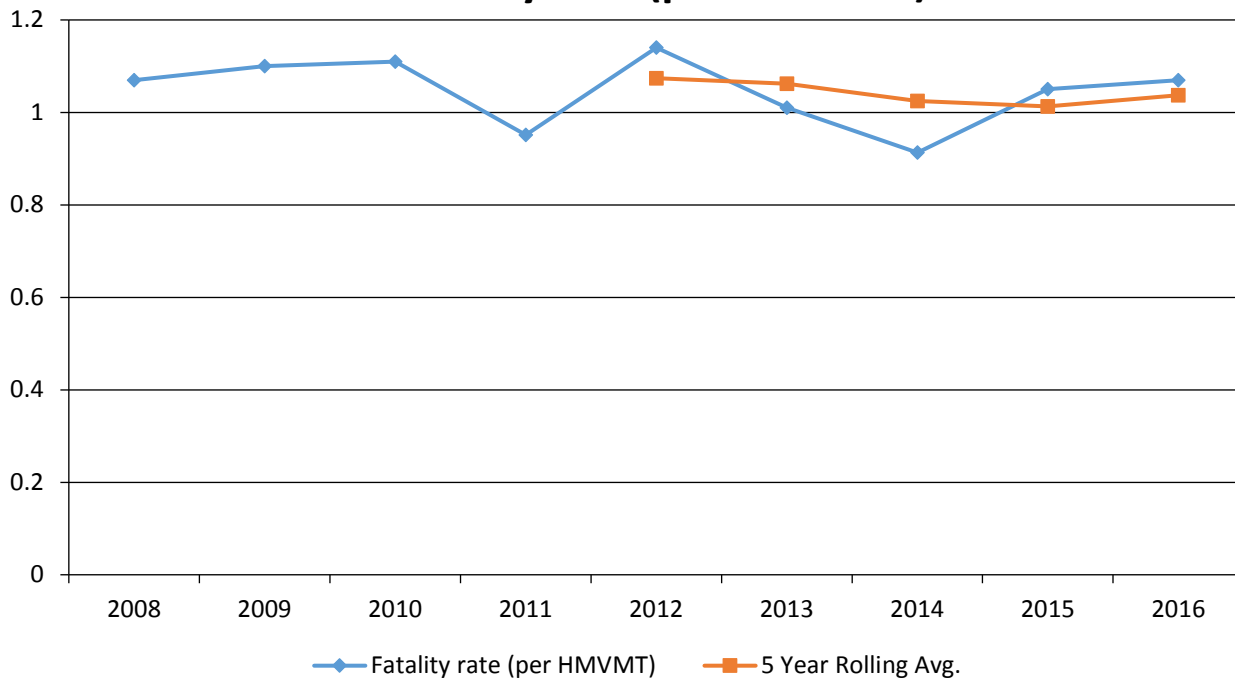
Fatality rate (per HMVMT)   5 Year Rolling Avg.

Serious injury rate (per HMVMT)

Serious injury rate (per HMVMT)   5 Year Rolling Avg.
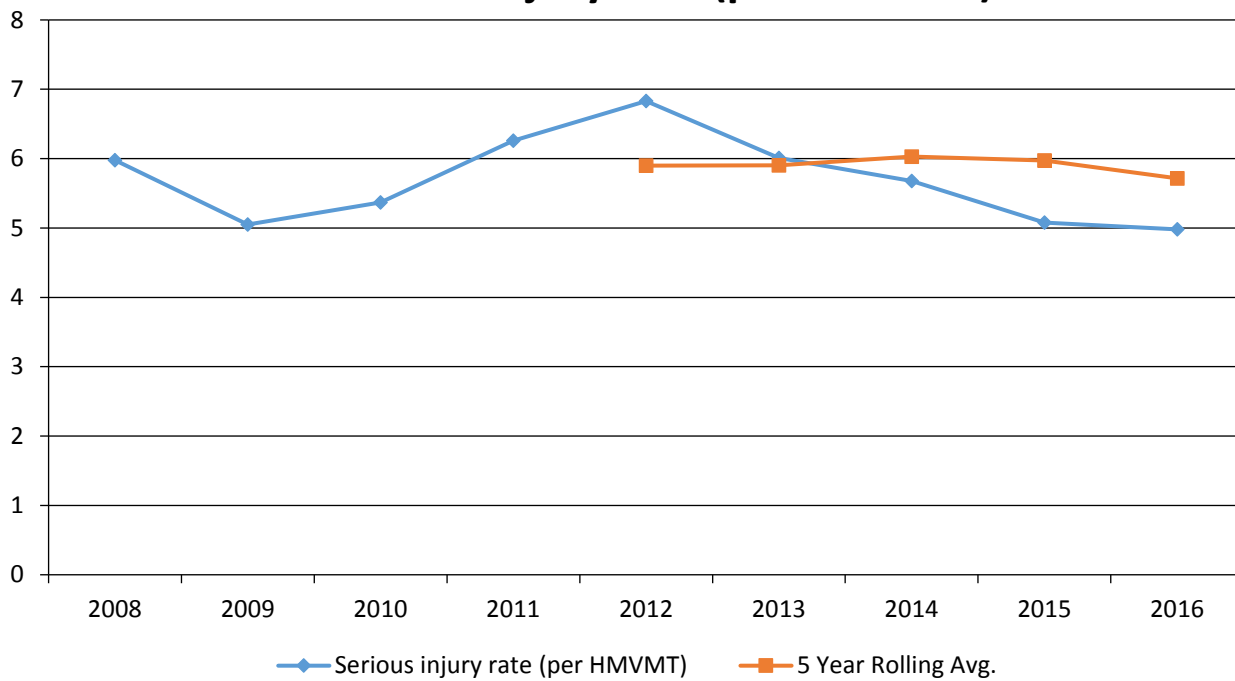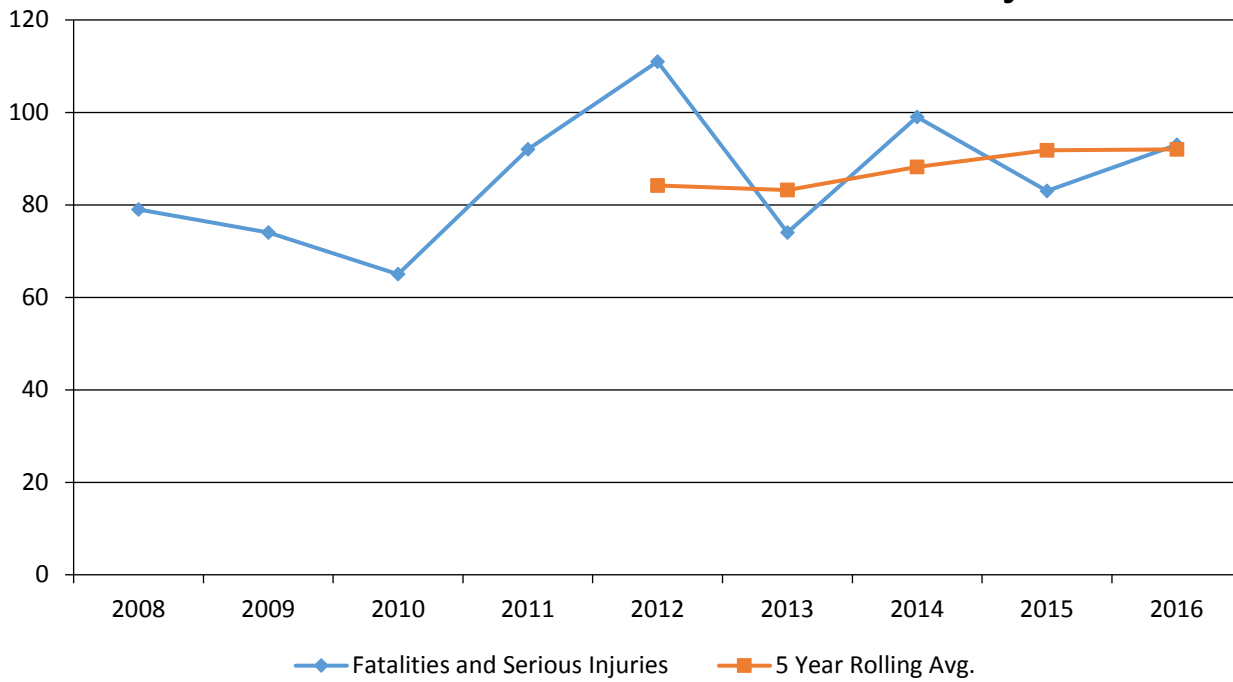
Non Motorized Fatalities and Serious Injuries

Fatalities and Serious Injuries — 5 Year Rolling Avg.

Enter additional comments here to clarify your response for this question or add supporting information.

Describe fatality data source.

FARS

Enter additional comments here to clarify your response for this question or add supporting information.

To the maximum extent possible, present this data by functional classification and ownership.

Year 2016

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial - Interstate	5.2	39.4	0.23	1.74
Rural Principal Arterial - Other Freeways and Expressways				
Rural Principal Arterial - Other	25.6	94.8	1.39	5.11
Rural Minor Arterial	23.8	106.4	1.37	6.14

2017 Maine Highway Safety Improvement Program

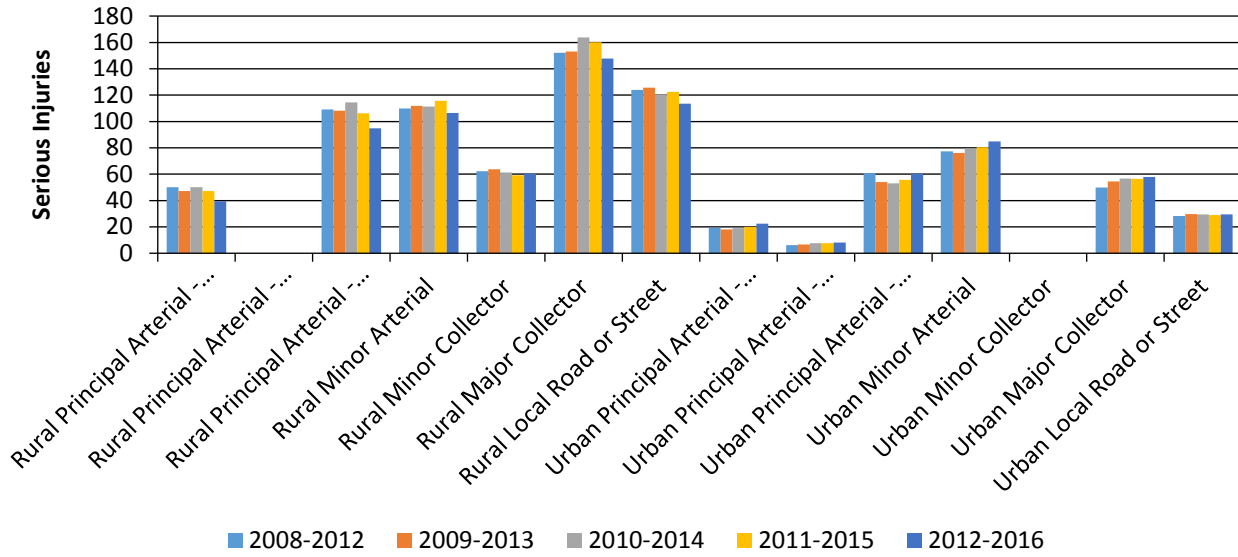| Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Minor Collector	11.2	60.2	1.36	7.29
Rural Major Collector	29.4	147.8	1.33	6.66
Rural Local Road or Street	25	113.4	1.73	7.85
Urban Principal Arterial - Interstate	2.6	22.4	0.26	2.22
Urban Principal Arterial - Other Freeways and Expressways	0.2	8.2	0.12	4.97
Urban Principal Arterial - Other	6	60.2	0.86	8.63
Urban Minor Arterial	7.2	84.8	0.72	8.56
Urban Minor Collector	0	0	0	0
Urban Major Collector	6.4	58	0.67	6.07
Urban Local Road or Street	3.8	29.6	0.86	6.69

Year 2016

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	81.8	478.2	0.96	5.59
County Highway Agency				
Town or Township Highway Agency	28.6	140.2	1.58	7.72
City of Municipal Highway Agency				
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority	2.6	16	0.19	1.16
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				
State Aid	34.2	194.4	1.22	6.93

Number of Fatalities by Functional Classification
5 Year Average

Legend: 2008-2012, 2009-2013, 2010-2014, 2011-2015, 2012-2016
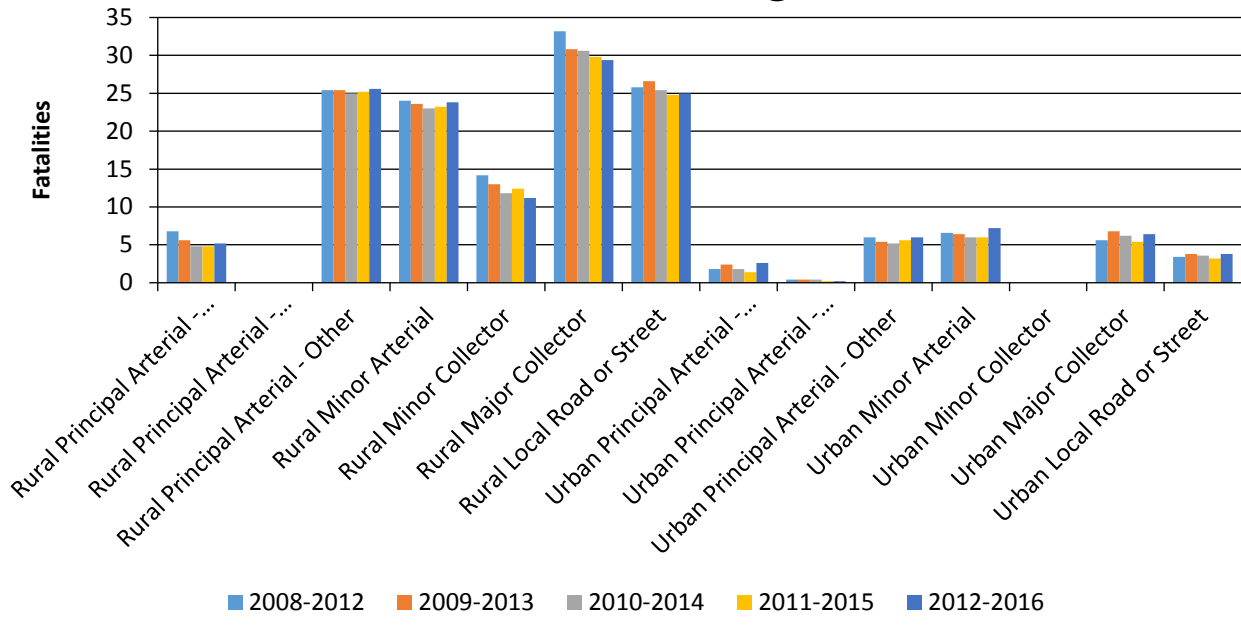
Number of Serious Injuries by Functional Classification
5 Year Average

Legend: ■ 2008-2012 ■ 2009-2013 ■ 2010-2014 ■ 2011-2015 ■ 2012-2016

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average

Legend: ■ 2008-2012 ■ 2009-2013 ■ 2010-2014 ■ 2011-2015 ■ 2012-2016

Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average

Serious Injury Rate

Categories: Rural Principal Arterial - …, Rural Principal Arterial - …, Rural Principal Arterial - …, Rural Minor Arterial, Rural Minor Collector, Rural Major Collector, Rural Local Road or Street, Urban Principal Arterial - …, Urban Principal Arterial - …, Urban Principal Arterial - …, Urban Minor Arterial, Urban Minor Collector, Urban Major Collector, Urban Local Road or Street

Legend: 2008-2012, 2009-2013, 2010-2014, 2011-2015, 2012-2016

Number of Fatalities by Roadway Ownership
5 Year Average

Legend: 2008-2012, 2009-2013, 2010-2014, 2011-2015, 2012-2016
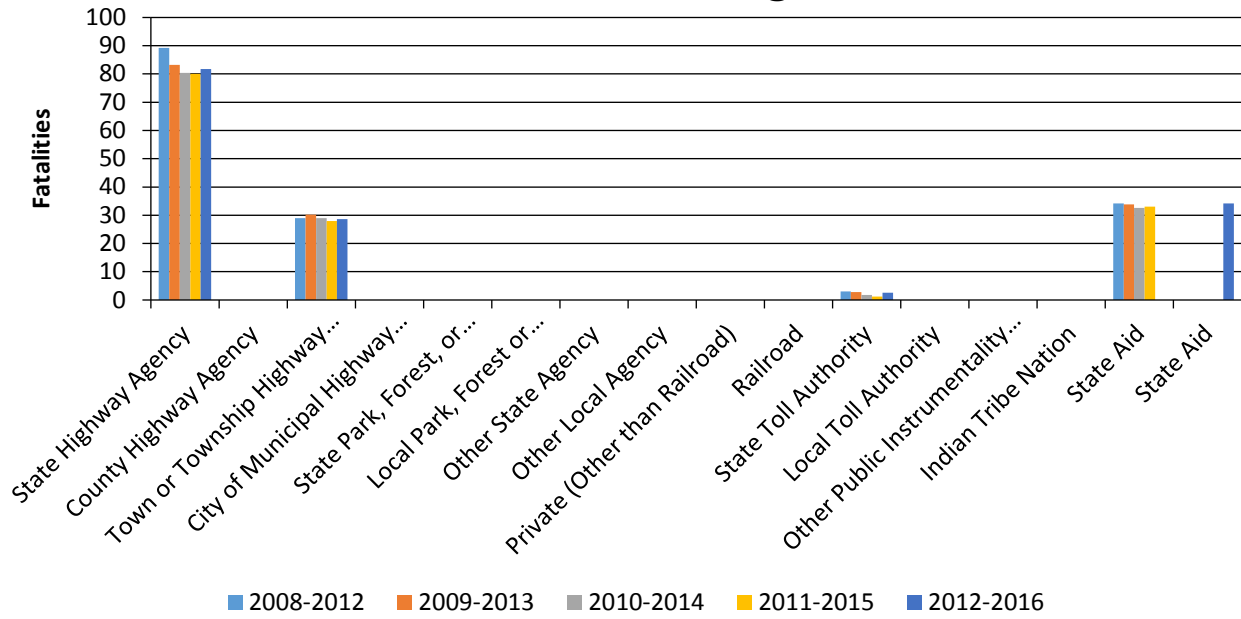
Number of Serious Injuries by Roadway Ownership
5 Year Average
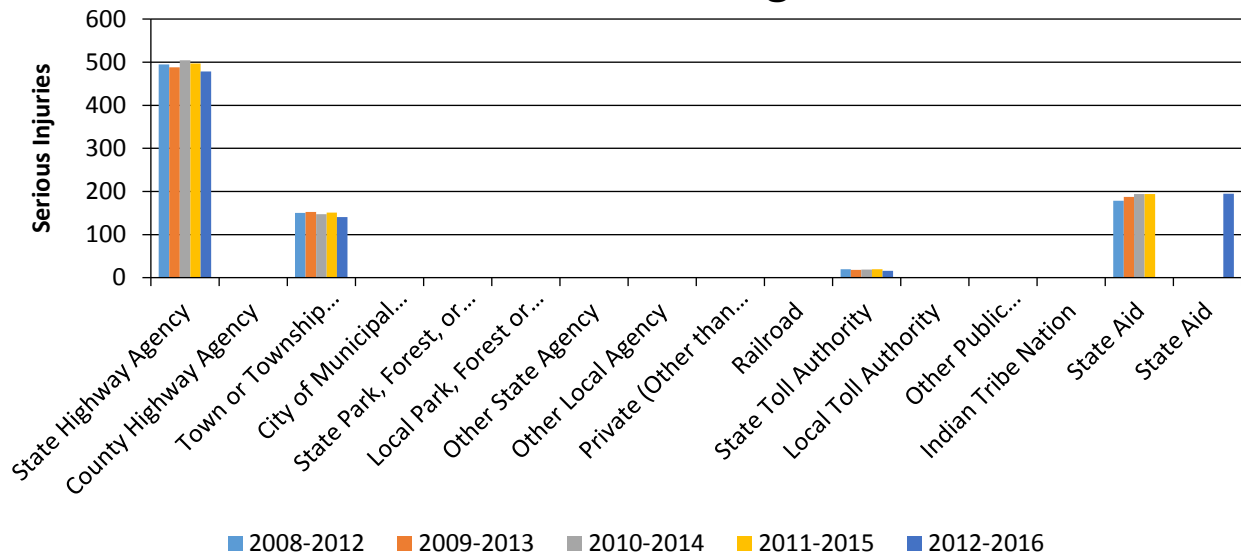
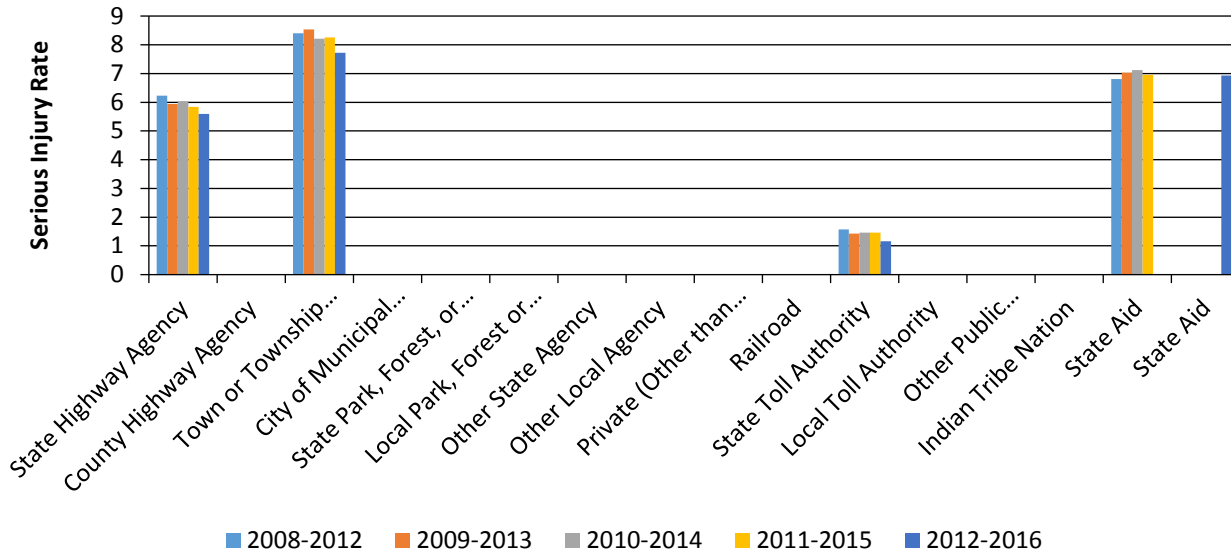# Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average

Legend: ■ 2008-2012 ■ 2009-2013 ■ 2010-2014 ■ 2011-2015 ■ 2012-2016
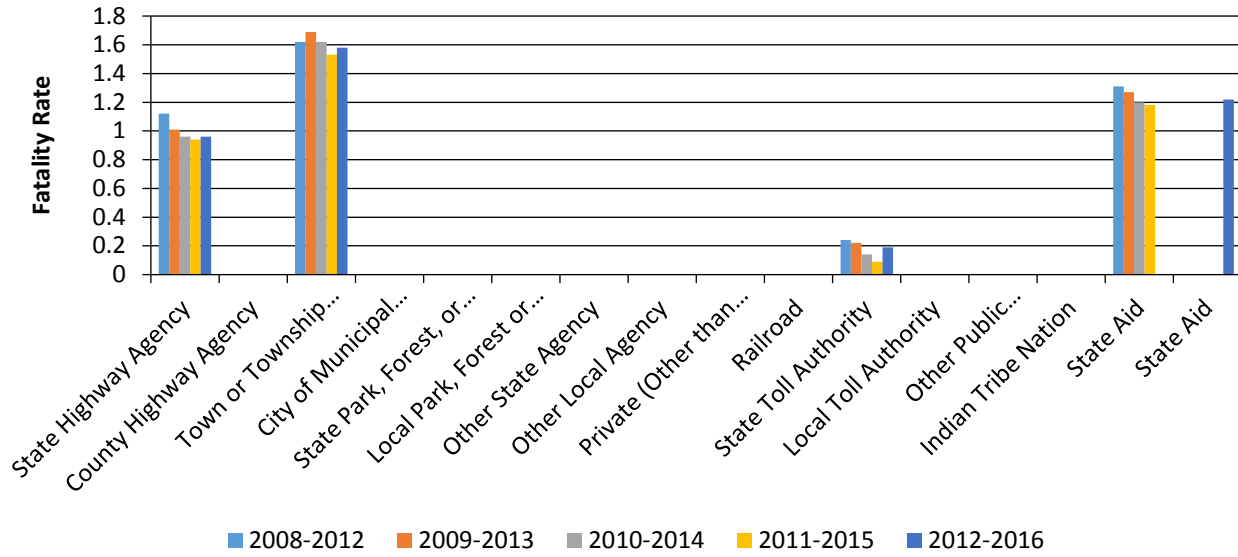
Serious Injury Rate (per HMVMT) by Roadway Ownership
5 Year Average

Enter additional comments here to clarify your response for this question or add supporting information.

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

Yes

Provide additional discussion related to general highway safety trends.

Key areas for Maine are Lane Departure (both head on and went off road) and pedestrians. Motorcycle fatalities which had increased sharply in 2015 have moderated to an average performance level in 2016.

Safety Performance Targets
Safety Performance Targets

Calendar Year 2018 Targets *

Number of Fatalities	153.4

Describe the basis for established target, including how it supports SHSP goals.

There are some positive and negative influencers along with assumptions at play in the near future that will limit what improvement can be expected: • Economy and fuel prices remain fairly stable at current levels. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians. • Based on recruitment difficulties along with state and local budgetary restraints, law enforcement agencies will continue to experience staffing challenges, reducing the effective crash-reducing impact that their on-road presence has. • Impaired driving is a growing concern both due to legalization of marijuana and increased illicit drug. That growing impairment problem translates to serious crash exposures. • Maine's VMT will continue to increase due to economic factors cited. This increases traffic exposure and in some situations, may decrease the level of service on high volume roads. Maine's Safety Performance Targets support the goals of the SHSP. With the recent trend of increasing fatalities both in Maine and nationwide, our goal is to first stabilize that trend and subsequently return to an overall reduction

Number of Serious Injuries   763.0

Describe the basis for established target, including how it supports SHSP goals.

There are some positive and negative influencers along with assumptions at play in the near future that will limit what improvement can be expected: • Economy and fuel prices remain fairly stable at current levels. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians. • Based on recruitment difficulties along with state and local budgetary restraints, law enforcement agencies will continue to experience staffing challenges, reducing the effective crash-reducing impact that their on-road presence has. • Impaired driving is a growing concern both due to legalization of marijuana and increased illicit drug. That growing impairment problem translates to serious crash exposures. • Maine's VMT will continue to increase due to economic factors cited. This increases traffic exposure and in some situations, may decrease the level of service on high volume roads. Maine's target is looking for a moderate improvement in the number of serious injuries.

Fatality Rate   1.030

Describe the basis for established target, including how it supports SHSP goals.

There are some positive and negative influencers along with assumptions at play in the near future that will limit what improvement can be expected: • Economy and fuel prices remain fairly stable at current levels. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians. • Based on recruitment difficulties along with state and local budgetary restraints, law enforcement agencies will continue to experience staffing challenges, reducing the effective crash-reducing impact that their on-road presence has. • Impaired driving is a growing concern both due to legalization of marijuana and increased illicit drug. That growing impairment problem translates to serious crash

exposures. • Maine's VMT will continue to increase due to economic factors cited. This increases traffic exposure and in some situations, may decrease the level of service on high volume roads. Maine's Safety Performance Targets support the goals of the SHSP. With the recent trend of increasing fatalities both in Maine and nationwide, our goal is to first stabilize that trend and subsequently return to an overall reduction

Serious Injury Rate   5.120

Describe the basis for established target, including how it supports SHSP goals.

There are some positive and negative influencers along with assumptions at play in the near future that will limit what improvement can be expected: • Economy and fuel prices remain fairly stable at current levels. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians. • Based on recruitment difficulties along with state and local budgetary restraints, law enforcement agencies will continue to experience staffing challenges, reducing the effective crash-reducing impact that their on-road presence has. • Impaired driving is a growing concern both due to legalization of marijuana and increased illicit drug. That growing impairment problem translates to serious crash exposures. • Maine's VMT will continue to increase due to economic factors cited. This increases traffic exposure and in some situations, may decrease the level of service on high volume roads. Maine expects to see a reduction in the serious injury rate in line with its SHSP targets.

Total Number of Non-Motorized Fatalities and Serious Injuries   90.0

Describe the basis for established target, including how it supports SHSP goals.

We look to reverse increasing trend. A significant Pedestrian Safety Public Outreach effort is underway that is aimed at reducing pedestrian crashes and their resulting fatalities and injuries. Maine's Safety Performance Targets support the goals of the SHSP. With the recent trend of increasing pedestrian fatalities both in Maine and nationwide, our goal is to first stabilize that trend and subsequently return to an overall reduction.

Enter additional comments here to clarify your response for this question or add supporting information.

Describe efforts to coordinate with other stakeholders (e.g. MPOs, SHSO) to establish safety performance targets.

ALL stakeholders (MPOs, Maine Bureau of Highway Safety (BHS), NHTSA, FHWA, MaineDOT) attended a safety performance targets setting work shop. From there, Maine Bureau of Highway Safety, NHTSA, FHWA, MaineDOT - all communicated together to arrive at agreed upon goals. BHS has reported identical targets in their recently submitted HSP.

MaineDOT has met with MPO's to discuss MPO target setting philosophy which boils down to expectation that MPO performance improvements will be at the same increments as state-wide targets based on 2016 benchmarks for each MPO. Those draft targets have been established and are first being reviewed internally here at MaineDOT and are planned to be sent out to each MPO at the end of this week.

Does the State want to report additional optional targets?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Applicability of Special Rules

Does the HRRR special rule apply to the State for this reporting period?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Provide the number of older driver and pedestrian fatalities and serious injuries for the past seven years.

PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015
Number of Older Driver and Pedestrian Fatalities	23	27	19	25	29	25	26
Number of Older Driver and Pedestrian Serious Injuries	71	69	79	94	89	74	70

Number of Older Driver and Pedestrian Fatalities and Serious Injuries by Year.

Enter additional comments here to clarify your response for this question or add supporting information.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries
Benefit/Cost Ratio

Enter additional comments here to clarify your response for this question or add supporting information.
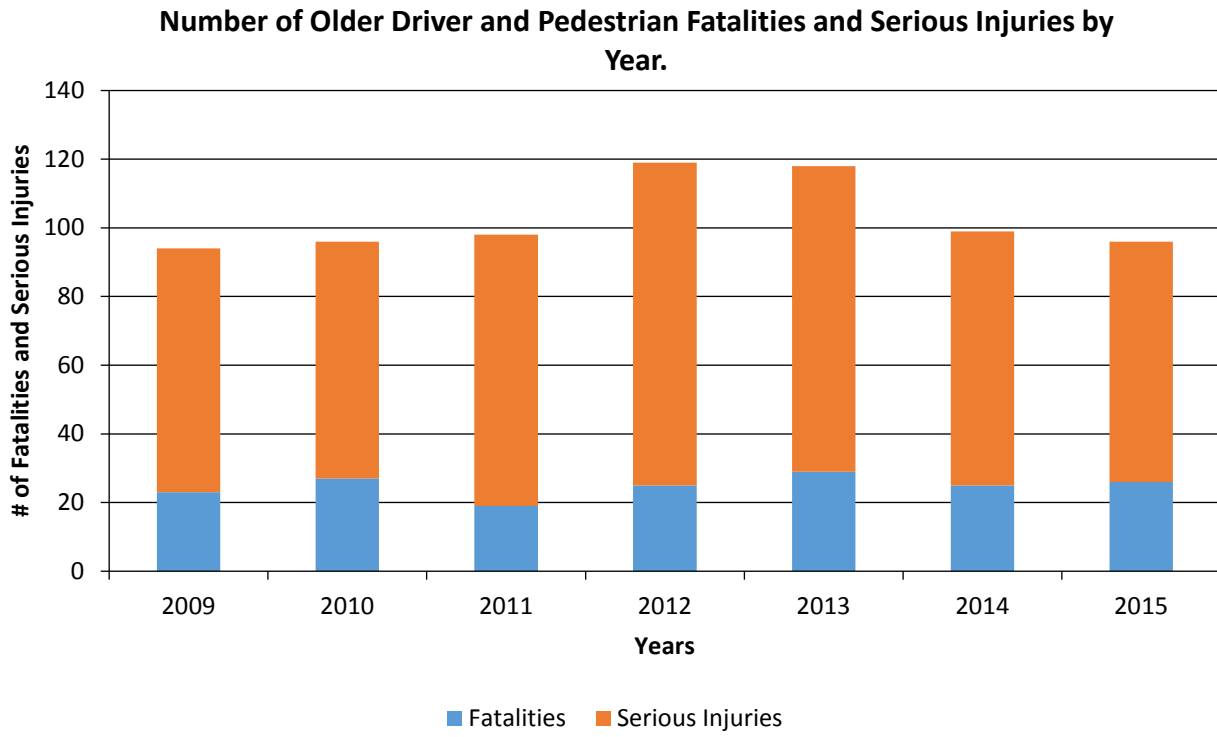
Based on the measures of effectiveness selected previously, describe the results of the State's program level evaluations.

Maine's fatalities have increased in the last two years after reaching a 70-year low in 2014. Performance there is not good.

Serious injury rate is making progress.

Benefit-Cost performance on mitigations has been good.

What other indicators of success does the State use to demonstrate effectiveness and success of the Highway Safety Improvement Program?

More systemic programs
Policy change
Increased awareness of safety and data-driven process
Increased focus on local road safety
Other-Pedestrian Strategic Focus Outcomes

Enter additional comments here to clarify your response for this question or add supporting information.

MaineDOT will be monitoring Pedestrian Safety Performance as a result of its focused outreach efforts that are underway now.

Are there any significant programmatic changes that have occurred since the last reporting period?

Yes

Describe significant program changes that have occurred since the last reporting period.

There is an exec level safety group that's meeting to solicit input from additional stakeholders.

There is a significant pedestrian safety strategic effort underway

2017 Maine Highway Safety Improvement Program
Systemic opportunities continue to be sought, with went off road the next area of opportunity.

Effectiveness of Groupings or Similar Types of Improvements

Present and describe trends in SHSP emphasis area performance measures.

Year 2016

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)	Other 1	Other 2	Other 3
Lane Departure	All	104.2	443.8	0.71	3.04			
Intersections	All	19.6	193.2	0.13	1.32			
Pedestrians	All	13	58.4	0.08	0.4			
Bicyclists	All	2.2	26.2	0.01	0.19			
Older Drivers	All	38.8	176.6	0.25	1.22			
Motorcyclists	All	19.6	132.8	0.13	0.9			

Number of Fatalities
5 Year Average

Legend: ■ 2008-2012 ■ 2009-2013 ■ 2010-2014 ■ 2011-2015 ■ 2012-2016
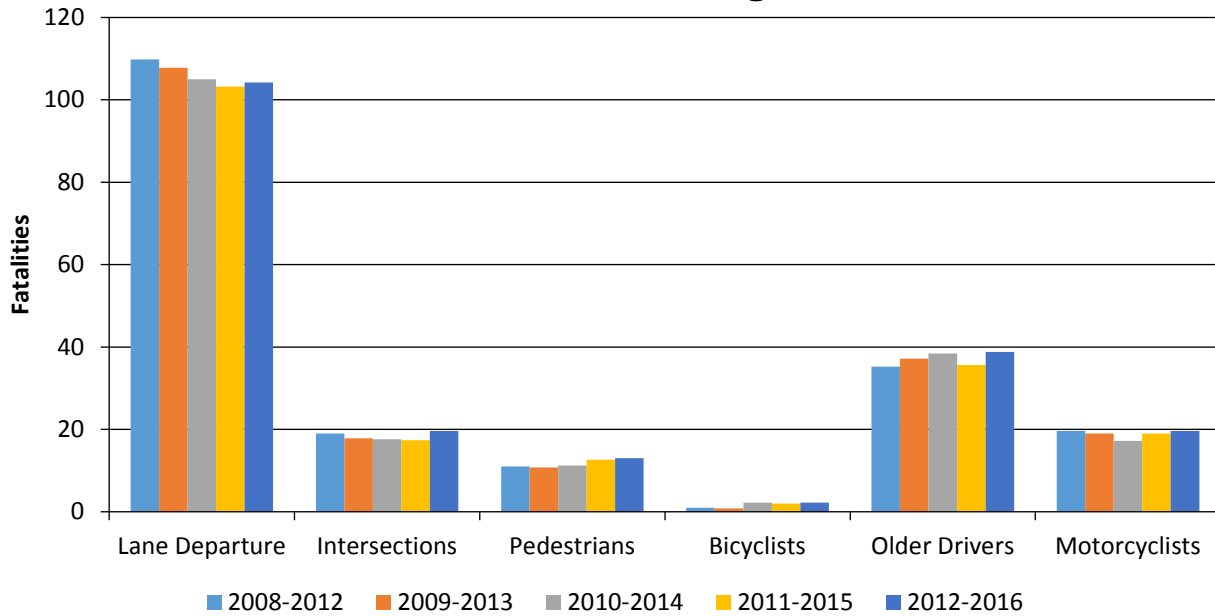
Number of Serious Injuries
5 Year Average

Legend: ■ 2008-2012 ■ 2009-2013 ■ 2010-2014 ■ 2011-2015 ■ 2012-2016
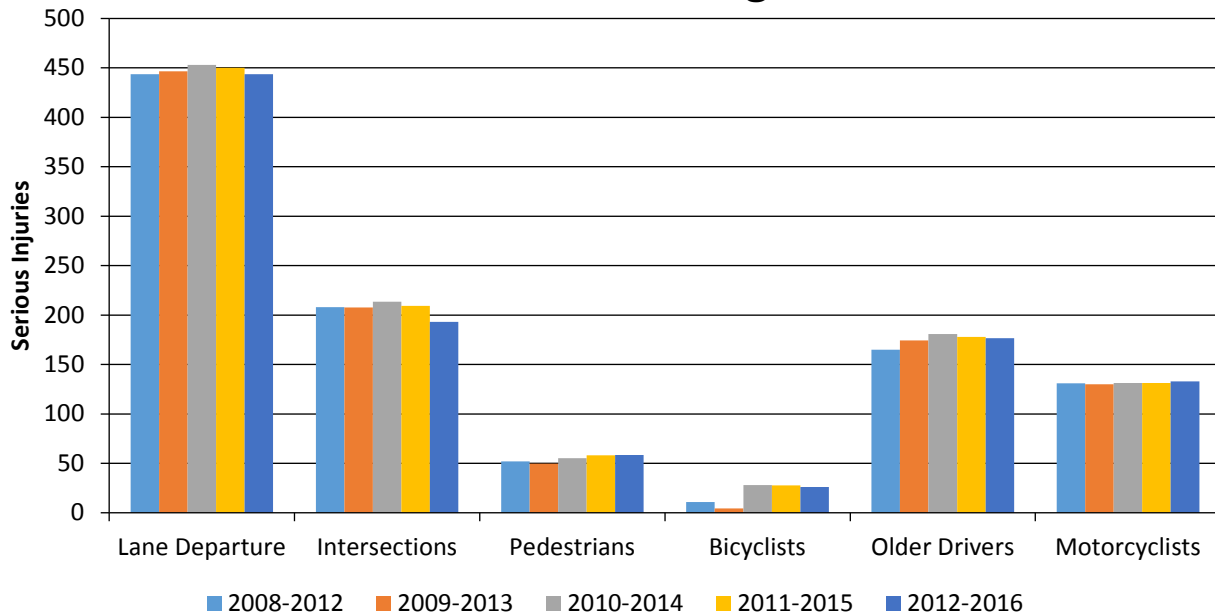
Fatality Rate (per HMVMT)
5 Year Average
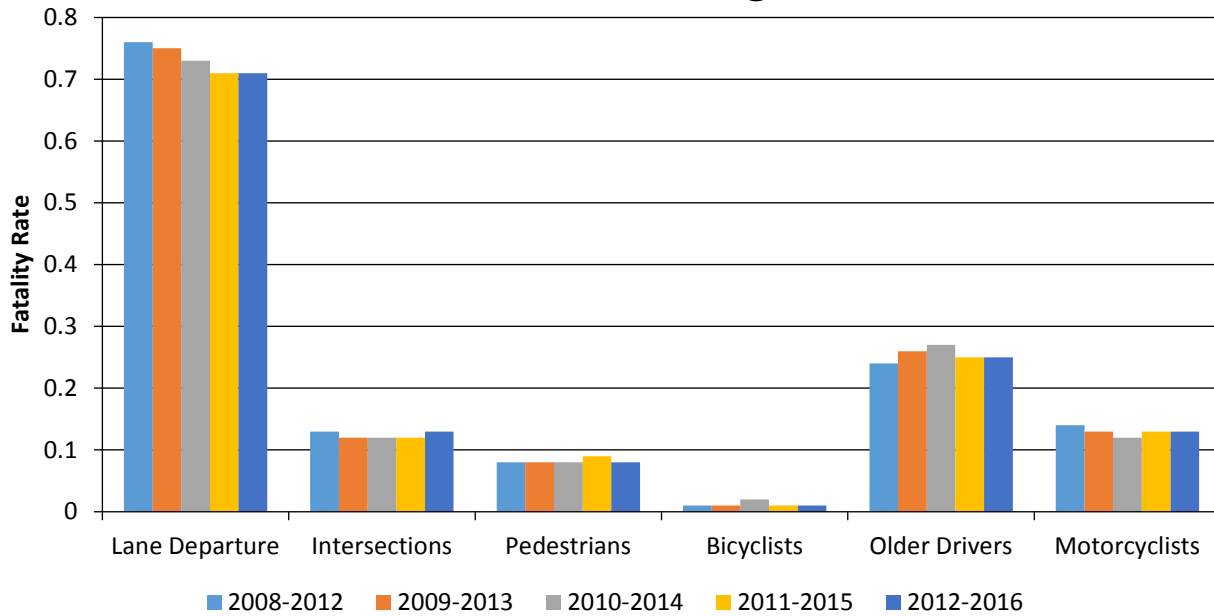
Serious Injury Rate (per HMVMT)
5 Year Average
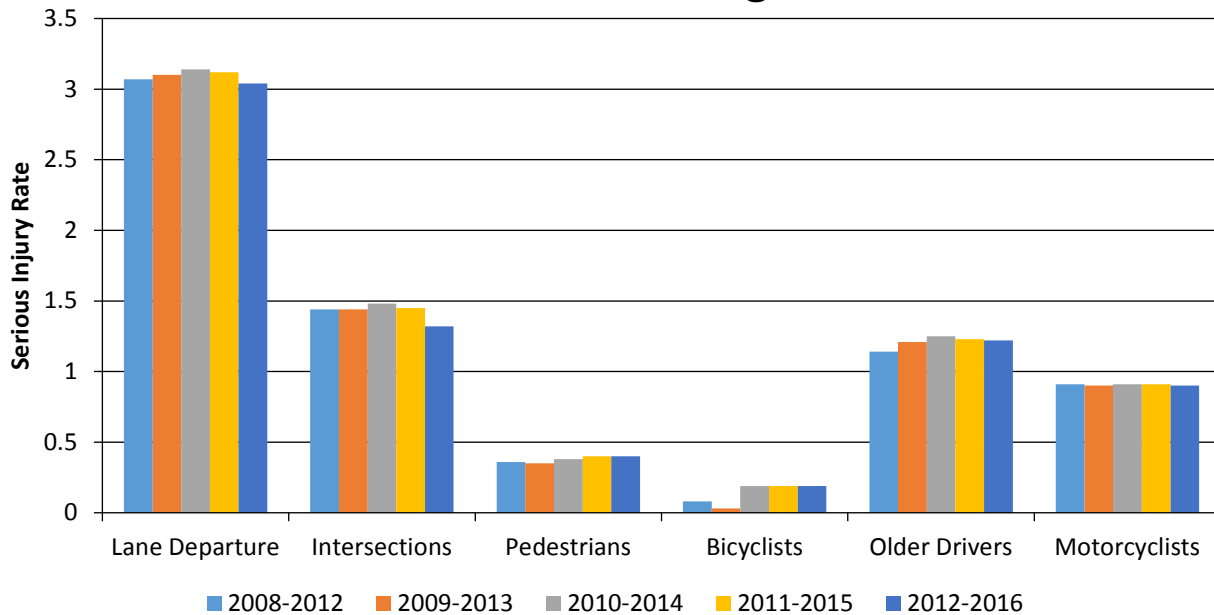
Enter additional comments here to clarify your response for this question or add supporting information.

Has the State completed any countermeasure effectiveness evaluations during the reporting period?

Yes

Please provide the following summary information for each countermeasure effectiveness evaluation.

CounterMeasures:	Rumble Strip Effectiveness
Description:	Since 2006, Maine has increasingly installed centerline rumble strips on higher volume, higher speed high priority road classes.
Target Crash Type:	Head on
Number of Installations:	
Number of Installations:	
Miles Treated:	55 miles evaluated, nearly 300 miles installed totally
Years Before:	
Years After:	
Methodology:	Other (define)
	Head On Fatalities down 90%. This is a high improvement. Since early installation corridors were those having significant crash problems, this rate of improvement will be higher initially and will likely moderate with time.
Results:	Head On crash reductions about 40%. Significant injuries are flat. Some improvements seen also in Went Off Road Crashes.

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Project Effectiveness

Provide the following information for previously implemented projects that the State evaluated this reporting period.

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL INJURY BEFORE	ALL INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
Kittery	Urban Minor Arterial	Roadway signs and traffic control	Roadway signs and traffic control - other	10.00	16.00					2.00	3.00	12.00	19.00	1.60
Standish	Major Urban Collector	Roadway signs and traffic control	Roadway signs and traffic control - other	7.00	8.00						4.00	7.00	12.00	-0.62
Trenton	Rural Minor Arterial	Roadway signs and traffic control	Roadway signs and traffic control - other	3.00	9.00					2.00	4.00	5.00	13.00	-0.49
Blue Hill	Major Urban Collector	Roadway signs and traffic control	Roadway signs and traffic control - other	5.00	3.00			2.00		4.00	1.00	11.00	4.00	1.42
Eddington	Major Urban Collector	Roadway signs and traffic control	Roadway signs and traffic control - other	6.00	7.00					3.00	2.00	9.00	9.00	0.15
Orono	Rural Minor Collector	Roadway signs and traffic control	Roadway signs and traffic control - other	8.00	6.00					5.00		13.00	6.00	0.41
Scarborough	Urban Minor Arterial	Roadway signs and traffic control	Roadway signs and traffic control - other	16.00	18.00					4.00	8.00	20.00	26.00	-3.91
Preque Isle	Rural Principal Arterial - Other	Roadway	Roadway - other	2.00								2.00		0.38
Berwick, N Berwick	Rural Minor Arterial	Roadway	Rumble strips - center	55.00	61.00	2.00	1.00	7.00	4.00	45.00	28.00	109.00	94.00	94.65
Auburn	Major Urban Collector	Roadway signs and traffic control	Curve-related warning signs and flashers	8.00	12.00					2.00	1.00	10.00	13.00	0.41
Lewiston	Urban Principal Arterial - Other	Roadway signs and traffic control	Roadway signs and traffic control - other	274.00	321.00	1.00		7.00	10.00	94.00	96.00	376.00	427.00	10.59
Augusta-Vassalboro	Rural Local Road or Street	Roadway signs and traffic control	Roadway signs and traffic control - other	6.00	7.00			1.00		3.00	4.00	10.00	11.00	11.50
Waldo	Major Urban Collector	Roadway signs and traffic control	Roadway signs and traffic control - other	7.00	8.00					4.00	2.00	11.00	10.00	16.37
Madison	Rural Major Collector	Roadway signs and traffic control	Roadway signs (including post) - new or updated	3.00	5.00						2.00	3.00	7.00	-1.51

2017 Maine Highway Safety Improvement Program

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL INJURY BEFORE	ALL INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
Bangor	Major Urban Collector	Roadway signs and traffic control	Roadway signs (including post) - new or updated	13.00	19.00			1.00		6.00	6.00	20.00	25.00	86.74
Burnham	Rural Minor Collector	Roadway signs and traffic control	Roadway signs and traffic control - other	10.00	5.00					5.00	2.00	15.00	7.00	8.25
Brunswick	Urban Principal Arterial - Other	Roadway signs and traffic control	Roadway signs and traffic control - other	114.00	125.00			4.00	3.00	43.00	38.00	161.00	166.00	2.74
Bangor	Urban Principal Arterial - Interstate	Roadway	Roadway - other	117.00	80.00			1.00	2.00	39.00	33.00	157.00	115.00	0.34
Rockland	Urban Principal Arterial - Other	Roadway signs and traffic control	Roadway signs and traffic control - other		3.00					5.00		5.00	3.00	2.87
Brewer	Urban Principal Arterial - Other	Roadway signs and traffic control	Roadway signs and traffic control - other	9.00	12.00					3.00	5.00	12.00	17.00	-6.97
Smyrna	Rural Principal Arterial - Interstate	Roadway	Roadway - other	3.00	7.00					2.00		5.00	7.00	2.06

Enter additional comments here to clarify your response for this question or add supporting information.

The above just reflects projects that have specific defined location-based projects (signing, striping, line striping projects not included in this list)

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

No

Compliance Assessment

What date was the State's current SHSP approved by the Governor or designated State representative?

09/22/2014

What are the years being covered by the current SHSP?

From: 2014 To: 2016

When does the State anticipate completing it's next SHSP update?

2018

Enter additional comments here to clarify your response for this question or add supporting information.

Last question above does not have 2017 as an option. Maine's plan is to have our next SHSP out in **2017.**

Provide the current status (percent complete) of MIRE fundamental data elements collection efforts using the table below.

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT										
Segment Identifier (12)	100	100					100	100	100	100
Route Number (8)	100	100								
Route/Street Name (9)	100	100								
Federal Aid/Route Type (21)	100	100								
Rural/Urban Designation (20)	100	100					100	100		
Surface Type (23)	100	100					100	100		
Begin Point Segment Descriptor (10)	100	100					100	100	100	100
End Point Segment Descriptor (11)	100	100					100	100	100	100
Segment Length (13)	100	100								
Direction of Inventory (18)	100	100								
Functional Class (19)	100	100					100	100	100	100
Median Type (54)	100	100								

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Access Control (22)	100	100								
One/Two Way Operations (91)	100	100								
Number of Through Lanes (31)	100	100					100	100		
Average Annual Daily Traffic (79)	100	100					100	100		
AADT Year (80)	100	100								
Type of Governmental Ownership (4)	100	100					100	100	100	100
INTERSECTION										
Unique Junction Identifier (120)			0	0						
Location Identifier for Road 1 Crossing Point (122)			0	0						
Location Identifier for Road 2 Crossing Point (123)			0	0						
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			0	0						
AADT for Each Intersecting Road (79)			100	100						
AADT Year (80)			100	100						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
Ramp Length (187)					100	100				
Roadway Type at Beginning of Ramp Terminal (195)					100	100				

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Roadway Type at End Ramp Terminal (199)					100	100				
Interchange Type (182)					0	0				
Ramp AADT (191)					100	100				
Year of Ramp AADT (192)					100	100				
Functional Class (19)					100	100				
Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):	100.00	100.00	25.00	25.00	81.82	81.82	100.00	100.00	100.00	100.00

Enter additional comments here to clarify your response for this question or add supporting information.

While there may be zero's entered in some areas above, MaineDOT does, in fact, have the core of the necessary required info in our data, but may have certain characteristics of those MIRE elements that we look to enhance so they fully meet MIRE descriptions. For example, for INTERSECTIONS - the UNIQUE JUNCTION IDENTIFIER... MaineDOT does currently have a NODE/ELEMENT identifier for all roads.

But we know that as we are updating our systems, these elements may be enhanced. Those '0' FDE's, even though they are largely in place, we are showing 0% just as an internal reminder to review.

The one element that needs to be newly developed is *Unique Interchange Identifier (178).*

Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

MaineDOT has a limited number of outstanding MIRE needs.

Developing the unique interchange identifier (#178) is still under discussion.

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Report Form	A Injury - Incapacitating Injury	No	N/A	No	N/A	No
Crash Report Form Instruction Manual	Incapacitating Injuriy	No	Includes: Severe Laceration, Broken of Distorted Limb, Skull or Chest Injury Abdominal Injury, Unconciousness at or when taken from the crash scene, Unable to leave the crash scene without assistance.	No	NA	No
Crash Database	A Injury - Incapacitating Injury	No	N/A	No	N/A	No
Crash Database Data Dictionary	A injury = Incapacting Injury	No	(From metadata) A Inj: Person had a bleeding wound, had a distorted member, or had to be carried from the scene.	No	See above	No

Please describe the actions the State is taking to become compliant by April 15, 2019.

Enter additional comments here to clarify your response for this question or add supporting information.

MaineDOT, Maine Bureau of Highway Safety and Maine State Police are all working together to bring crash reports and related documentation into compliance with MMUCC 4th edition definition.

Did the State conduct an HSIP program assessment during the reporting period?

Yes

Describe the purpose and outcomes of the State's HSIP program assessment.

Completed in May 2017 - here are core findings.

Noteworthy Practices:
- Data: Maine has an abundance of available safety data for all public roads.
- Highway Safety Manual: Maine is a lead state in using the Highway Safety Manual.
- Coordination: MaineDOT's "Synergy" meetings provide an opportunity for the state to leverage resources and incorporate safety into all aspects of the work plan.
- Collaboration: MaineDOT's Highway Safety Committee allows internal staff to collaborate proactively across institutional boundaries on emerging safety issues.

Recommendations:
1. Develop comprehensive safety program documentation.
2. Integrate the SHSP into investment decision making.
3. Establish a process to ensure all safety improvement projects compete against each other for HSIP funds.
4. Consider succession planning and reorganization as HSIP staff with institutional knowledge leave MaineDOT.
5. Incorporate horizontal curve, super-elevation, and grade data into safety data systems.
6. Regularly evaluate all completed HSIP funded projects.

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

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Compliance Assessment:

Glossary

5 year rolling average	means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).
Emphasis area	means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.
Highway safety improvement project	means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.
HMVMT	means hundred million vehicle miles traveled.
Non-infrastructure projects	are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.
Older driver special rule	applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.
Performance measure	means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.
Programmed funds	mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.
Roadway Functional Classification	means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.
Strategic Highway Safety Plan (SHSP)	means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.
Systematic	refers to an approach where an agency deploys countermeasures at all locations across a system.
Systemic safety improvement	means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.
Transfer	means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.